

than that of *I. stolzmanni*, the type of which is a very much younger individual; the facial portion is narrower, and there is a marked difference in the shape of the interparietal bones, as will be seen by the measurements: in *I. stolzmanni* this bone forms nearly a perfect parallelogram, while in the new species it is almost diamond-shaped. The zygomatic arch differs considerably, the maxillary processes being broader and standing out at a greater angle; the squamosal process appears rather slighter, but is more horizontal, not drooping so much as in the type species; it will therefore be seen that the "greatest breadth" given of the skulls is the same in both species, though the width across the brain-case is much less in the species now being described.

The mandibles are decidedly smaller, with very small and almost round condylar processes, whereas these are large and oval in *I. stolzmanni*.

In all particulars of structure of feet, ears, and tail this species seems to agree with the type of the genus *I. stolzmanni*, Thomas, P. Z. S. 1893, p. 339; the most conspicuous outward distinction being the difference in the coloration of the tail and feet. I think the make-up of the skin has largely to do with the greater length of head and body in the specimen under consideration, as the size of the feet and measurements of the skull do not bear out the supposition of its being a larger animal.

I am unable to throw any light on the cause of the large infra-orbital foramen; but I can say that no muscles pass through it, and that the nerve seemed very small when relaxed after it reached the Museum in a dry state.

3. *CHIRONECTES MINIMUS* (Zinnm.).

♂ jr. Nanegal; alongside the rivers (no date) (*L. S.*).

2. On the Butterflies of St. Vincent, Grenada, and the adjoining Islands of the West Indies. By F. DuCANE GODMAN, F.R.S., and OSBERT SALVIN, M.A., F.R.S.

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The collection of Rhopalocera upon which the following notes are based was formed by Mr. Herbert H. Smith in the West-Indian islands of St. Vincent and Grenada and in some of the small islets called the Grenadines, situated between the two larger ones. A few specimens were also obtained from Barbados. Mr. Smith's skill as a collector is well known, and as he spent a considerable time in both St. Vincent and Grenada, and visited all parts of each island, we may fairly conclude that the present list embraces the name of nearly every species found in them.

The result proves, we think conclusively, that the Butterfly fauna  
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is a very poor one, and there is now no likelihood of any important additions being made.

In 1884 (P. Z. S. pp. 314-320) we wrote a short paper on the Rhopalocera of the island of Dominica, and gave an account of the 27 species enumerated, together with a general view of the relationship of the Butterfly fauna of the island to that of the adjoining regions. The present list entirely confirms the conclusions arrived at and points to the great poverty of this portion of the West-Indian fauna. The Danainæ are represented by two species of *Danais*, the Ithomiinæ being wholly absent. Of Nymphaliniæ we find only eight species of six genera, all of them more or less common continental species. Heliconinæ are absent, and so are Satyrinæ, Morphinæ, and Brassolinæ. Erycinidæ are unrepresented, but Lycænidæ show eight species, of which we now describe three as new, all of them slight modifications of widely spread southern forms. Of Pierinæ (seven species), *Pieris virginia* is the only one peculiar to the Antilles and is also found in Dominica. The only *Papilio* is apparently *P. eurydamas*, which also occurs in Martinique. Of Hesperiidæ we find thirteen species, and of these we give new names to three, two of which have not been found elsewhere.

Comparing the Butterflies of the two islands, we find little to notice. Grenada has, as might be expected, a slight preponderance of southern forms, of which *Cystineura cana* is an example.

#### DANAINÆ.

##### 1. DANAIIS PLEXIPPUS (Linn.).

*Danais plexippus*, Biol. Centr.-Am., Rhop. i. p. 1; P. Z. S. 1884, p. 315.

Three examples from St. Vincent (both windward and leeward sides), with white subapical spots, agreeing with South-American specimens.

##### 2. DANAIIS ERESIMUS (Cram.).

A South-American species of wide range, occurring in Hispaniola and Jamaica.

"Swampy forest by the sea-shore north of Granville, Grenada I.; common in this locality. Also Telescope Estate, windward side, April."

#### NYMPHALINÆ.

##### 3. COLĒNIS JULIA (Fabr.).

Several specimens agreeing with South-American examples, having the oblique submarginal dark band on the primaries well developed. The Dominica species is much nearer Cramer's *C. cillene*, but differs in some respects. All these island forms require revision.

"St. Vincent; very common in open lands below 1000 or 1500 feet."

4. *AGRAULIS JUNO* (Cram.).

*Agraulis juno*, Biol. Centr.-Am., Rhop. i. p. 170.

Not previously noticed in the West Indies.

"Grand Etang, Grenada, June 2, 1900 feet. Open weedy shore of the lake and edge of the forest." Also St. Vincent, below 1000 feet.

5. *AGRAULIS VANILLÆ* (Linn.).

*Agraulis vanillæ*, Biol. Centr.-Am., Rhop. i. p. 171; P. Z. S. 1884, p. 315.

"Balthazar, Grenada, 250 feet, May 25, open weedy place." Also St. Vincent, below 1000 feet.

Found on most of the West-Indian Islands and the greater part of the mainland.

6. *JUNONIA CÆNIA*, Hübn.

*Junonia cænia*, Biol. Centr.-Am., Rhop. i. p. 220; P. Z. S. 1884, p. 316.

St. Vincent and Granville, Grenada.

Several specimens agreeing with the northern form found in the Greater Antilles and Central America.

7. *ANARTIA IATROPHE* (Linn.).

*Anartia iatrophe*, Biol. Centr.-Am., Rhop. i. p. 221; P. Z. S. 1884, p. 316.

St. Vincent and Granville, Grenada.

"Common in open weedy places below 1000 feet."

8. *ANARTIA AMALTHEA* (Linn.).

Barbados.

A single specimen of this common South-American species. Not previously noticed from any West-Indian island.

9. *CYSTINEURA CANA*, Erichs.

*Cystineura cana*, Schomb. Reise n. Guiana, iii. p. 601.

"St. Vincent; Balthazar, Grenada, May 8, 250 feet, open weedy places; Barbados."

Several specimens agreeing closely with others from British Guiana which are doubtless referable to *C. cana*. The light spots forming a band across the secondaries beneath are smaller and consequently more isolated, and the dark lines across the base of those wings more distinct: otherwise there is little difference.

10. *AGANISTHOS ORION* (Fabr.).

*Aganisthos orion*, Biol. Centr.-Am., Rhop. i. p. 324.

Grenada.

Two specimens of this common species, which is also found in Hispaniola, but no other West-Indian island that we know of.

## LYCENIDÆ.

11. *THECLA CYBELE*, sp. n.

*T. marsyæ* (Linn.) *similis, sed alis supra omnino cyanescentioribus: subtus maculis nigris omnibus læte albicanti-cæruleo distincte marginatis; anticis area tota ad marginem internum læte cyanea; posticis ad angulum analem cærulescentioribus, macula submarginali nigra intra ramos medianos anguste ovali nec fere rotunda distinguenda.*

♀ a femina *T. marsyæ* eodem modo differt.

*Hab.* St. Vincent.

"Windward and leeward sides Wallibon Valley, 400 to 500 feet, edge of forest, June 10."

This species seems sufficiently distinct from the Continental *T. marsyas* to require a name. Mr. Smith obtained a series of specimens on St. Vincent both on the windward and leeward sides of the island.

12. *THECLA PIPELEA*, sp. n.

*T. pioni proxima, sed alis subtus saturatioribus; posticis macula coccinea submarginali inter venam medianam et rannum suum secundum multo majore, fasciis duobus maculosis transversis magis approximatis.*

*Hab.* St. Vincent.

"Scrubby growth on Snfriere Volcano, 2500 feet, Jan. 5-10, near the craters."

This species is closely allied to *T. pion* of Central America (Biol. Centr.-Am., Rhop. ii. p. 56, pl. 54. ff. 28-30), and the male has the small tuft of hair on the upperside of the secondaries near the base of the subcostal nervure characteristic of this group of *Thecla*.

Mr. Smith obtained a series of specimens in good condition.

13. *THECLA ANGERONA*, n. sp.

*T. angelix similis et supra vix differt anticis medialiter vix castaneis; subtus posticis macula submarginali rubra magna, fasciis transversis duabus nigris inter ramos medianos attingentibus.*

*Hab.* St. Vincent, Grenadines, and Grenada.

"Common all the year in all parts of St. Vincent in open land at the edge of the forest up to 3000 feet. Wallibon Valley, 500 feet, Jan. 10."

"Mount Gay Estate and Balthazar, Grenada; Mustique Island, Grenadines."

Mr. Smith has sent a large series of specimens of this *Thecla*, which appears to be quite common in St. Vincent. It is closely allied to the Cuban *T. angelia*, Hew. (Ill. Diurn. Lep. p. 162, pl. 63. ff. 439, 440).

14. *THECLA TELEA*, Hew.

*Thecla telea*, Biol. Centr.-Am., Rhop. ii. p. 82.

"Edge of forest Wallibon Valley, St. Vincent, 500 feet, Jan. 10,"

and "open land near Barroallie, St. Vincent, 500 feet, Jan. 12." L<sup>c</sup>  
 "St. George's, Grenada."

Three males and a female of this beautiful little species. The colour of the space between the eyes is dark in some examples and rufous in others, so that this must be considered a variable character. In the tint of the blue of the upper surface of the wings they agree with Central-American specimens rather than with the lighter brighter Amazonian types.

15. *THECLA SIMÆTHIS* (Drury).

*Thecla simæthis*, Biol. Centr.-Am., Rhop. ii. p. 81.

Balthazar, Grenada.

Several female specimens agreeing with our mainland series. Drury's type came from the island of St. Christopher.

16. *THECLA RUFO-FUSCA*, Hew.

*Thecla rufo-fusca*, Hew. Ill. Diurn. Lep. p. 196, pl. 78. ff. 627, 628; Godm. & Salv. Biol. Centr.-Am., Rhop. ii. p. 91.

"Open land near Barronallie, St. Vincent, 500 feet, Jan. 12."

Several specimens agreeing with the series from Guatemala and Pernambuco referred to in our work.

17. *THECLA EURYTULUS* (Hübner).

*Thecla eurytulus*, Biol. Centr.-Am., Rhop. ii. p. 96.

"Open land near Barronallie, St. Vincent, 500 feet, Jan. 13, and Wallibon Valley, edge of forest, 500 feet, Jan. 10.

"Mount Gay, Granville, Balthazar, St. George's, Grenada."

Many specimens agreeing with our series of this common widely spread species.

18. *LYCÆNA HANNO* (Stoll).

*Lycæna hanno*, Biol. Centr.-Am., Rhop. ii. p. 106.

St. Vincent; Mustique and Union Is., Grenadines; Balthazar, Grenada.

Several specimens of this common widely ranging species.

## PAPILIONIDÆ.

### PIERINÆ.

19. *TERIAS LYDIA*, Feld.

*Terias lydia*, Biol. Centr.-Am., Rhop. ii. p. 170.

"Botanical Gardens, Kingstown, St. Vincent, 500 feet, Jan. 20. Open places."

Mount Gay Estate, Balthazar and Granville (Aug. 6), Grenada.

Most of the males of Mr. Smith's series agree with the type of *T. lydia*, Feld., from Venezuela, but one example from St. Vincent differs in having the dark border of the secondaries nearly concentrated at the apical angle, and the submarginal dark line near the inner border of the primaries decidedly narrow; the underside,

too, is more fulvous. We are still reluctant to unite *T. lydia* to the Cuban *T. palmyra*, Poey, but are strongly of opinion that it will not be possible eventually to keep them separate.

20. *TERIAS LIMBIA*, Feld.

*Terias limbia*, Biol. Centr.-Am., Rhop. ii. p. 164.

*Terias deva*, Bates, Journ. Ent. i. p. 240; Godm. & Salv. P. Z. S. 1884, p. 317.

"St. Vincent below 1000 feet, common in open places; Mount Gay Estate above 500 feet, Sept. 15; Granville, Grenada; Barbados."

21. *TERIAS ALBULA* (Cram.).

*Terias albula*, Biol. Centr.-Am., Rhop. ii. p. 166.

"St. Vincent, Wallibou Valley, 500 feet, Jan. 10, edge of forest, also near the sea-level."

22. *PIERIS VIRGINIA*, Godt.

*Pieris virginia*, Godm. & Salv. P. Z. S. 1884, p. 317.

"St. Vincent, Rabacca Estate, near the sea-level, Jan. 2, rare."

A male agreeing with the specimens from Dominica referred to in our notes on the Butterflies of that island.

23. *PIERIS MONUSTE* (Linn.).

*Pieris monuste*, Biol. Centr.-Am., Rhop. ii. p. 132.

Union I., Grenadines; Granville, Grenada.

These specimens do not quite agree with the variable *P. monuste* of the continent; the secondaries beneath, especially in one of the females from Union Island, are strongly tinged with ochre, thus showing a variation in the direction of *P. virginia*.

24. *CALLIDRYAS EUBULE* (Linn.).

*Callidryas eubule*, Biol. Centr.-Am., Rhop. ii. p. 141.

"St. Vincent, below 1000 feet, common in open places; Mustique I., Union I., Grenadines; Grenada, Mount Gay Estate, Granville; Barbados."

25. *PHŒBIS ARGANTE* (Fabr.).

*Phœbis argante*, Biol. Centr.-Am., Rhop. ii. p. 144.

"Union I., Grenadines; St. Vincent, Caliveny Estate, scrubby growth on hillsides near the sea-level."

PAPILIONINÆ.

26. *PAPILIO EURYDAMAS*, Roger.

*Papilio eurydamas*, Roger, Bull. Soc. Linn. Bordeaux, i. p. 36 (1826).

"St. Vincent, 3500 feet, pretty common; Balthazar, Grenada, 250 feet, March 23."

A male and two females agreeing fairly with Roger's description,

but their determination cannot be considered final until they are compared with Martinique specimens, whence Roger's types came. In Dominica another form (*P. neodamas*, Lucas) is found (see P. Z. S. 1884, p. 318), differing *inter alia* in the greenish-yellow band of the secondaries crossing nearer the middle of the wings and away from the outer margin.

#### HESPERIIDÆ.

##### 27. EUDAMUS PROTEUS (Linn.).

*Eudamus proteus*, Biol. Centr.-Am., Rhop. ii. p. 277.

*Thymeles proteus*, Godm. & Salv. P. Z. S. 1884, p. 318.

St. Vincent; Mustique I., Grenadines; Granville and Mount Gay Estates, Grenada.

##### 28. EUDAMUS SANTIAGO, Lefebv.

*Eudamus santiago*, Godm. & Salv. P. Z. S. 1884, p. 318.

"St. Vincent, very common in open places 2000 to 3000 feet above sea-level; Union, Mustique, and Canouan Is., Grenadines; Mount Gay, Grenada."

Many specimens agreeing with Dominica examples, and apparently referable to this Cuban species.

##### 29. GONIURUS TALUS (Cram.).

*Goniurus talus*, Biol. Centr.-Am., Rhop. ii. p. 288.

"St. Vincent, windward side, May."

##### 30. PROTEIDES ANGASI, Godm. & Salv.

*Proteides angasi*, Godm. & Salv. P. Z. S. 1884, p. 318, pl. 25. fig. 2.

"St. Vincent, rare in open places in the forest up to 1500 or 2000 feet, July."

Several specimens agreeing with the types from Dominica.

##### 31. ACOLASTUS AMYNTAS, Fabr.

*Acolastus amyntas*, Biol. Centr.-Am., Rhop. ii. p. 304.

*Hesperia* ? *amyntas*, Godm. & Salv. P. Z. S. 1884, p. 319.

St. Vincent.

##### 32. TELEGONUS ANAUSIS, sp. n.

*Telegonus anaphus*, Godm. & Salv. P. Z. S. 1884, p. 319.

T. *anapho similis*, sed *posticis angulo anali omnino fusco, fulvo minime notato: subtus quoque fere omnino fuscis, lineola brevi fulva submarginali notatis.*

*Hab.* St. Vincent; Balthazar and Chantilly Estate, Grenada.

This is an island form of the common *Telegonus anaphus* of the Continent, distinguished by the absence of the tawny margin to the anal angle of the secondaries. Besides the series before us from Mr. Smith's collection, we have specimens from Dominica and Hispaniola.



33. *HESPERIA SYRICHtus*, Fabr.

*Pyrgus syrichtus*, Godm. & Salv. P. Z. S. 1884, p. 319.

"St. Vincent, the commonest of the Hesperiidæ in open places up to 3000 feet, Richmond Estate, Dec. 14; Union I., Grenadines; Balthazar and Mount Gay Estate, Grenada."

- 34. *HESPERIA* ? *ASYCHIS* (Cram.).

"St. Vincent; Mustique I., Grenadines; Balthazar, Grenada, roadside 1250 feet, August."

35. *CALPODES ETHLIUS* (Cram.).

*Pamphila ethlius*, Godm. & Salv. P. Z. S. 1884, p. 319.

St. Vincent; St. George's, Granville, and St. John's River, Grenada.

36. *CALPODES COSCINIA* (H.-S.).

*Goniurus coscinia*, Herr.-Sch. Corresp.-Blatt. Regensb. xix. p. 54.

"St. Vincent, near Barronallie, 500 feet, open lands, Jan. 13; St. George's, Mount Gay Estate, and Chantilly Estate, Grenada."

37. *PRENES EUGEON*, sp. n.

*P. panoquin*, Scudder, *affinis sed minor, alis magis ochraceis; anticis minus elongatis, macula hyalina inter ramos medianos fere rotunda, minime sagittiformi; subtus ochraceoribus.*

*Hab.* Union I., Grenadines; Granville and St. George's, Grenada.

M. Mabille, to whom we sent a specimen of this species, writes to say that it is near to the insect he described as *Pamphila parilis*, which again appears to be close to *P. panoquin*. So far as we can see, the differences pointed out above distinguish it from both these forms. Mr. Smith captured one of his specimens on the sea-shore about a mile from St. George's on 19th October.

38. *HYLEPHILA PHYLÆUS*, Drury.

*Pamphila phylæus*, Godm. & Salv. P. Z. S. 1884, p. 319.

"St. Vincent, on flowers, open land near Barronallie, 500 feet"; St. George's, Granville, and Mount Gay Estate, Grenada.

39. *HYLEPHILA DICTYNNA*, sp. n.

*Alis rufescenti-fulvis nigro extrorsum marginatis, ciliis fulvis; anticis stigmata obliquo nigerrimo leviter arcuato, ultra illud lineola incerta nigra ad cellulae finem; subtus rufescenti-fulvis fere unicoloribus, anticis plaga basali et macula ad angulum analem nigris; palpis et pectore ochraceis.*

*Hab.* St. Vincent, common in open places up to 2000 feet; St. George's, Balthazar, Grenada.

Many specimens, all males. *H. vibex* seems to be the most nearly allied species and has the alar band similarly shaped; but the colour and the absence of spots on the secondaries beneath at once distinguish it.